



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF ENVIRONMENTAL SERVICES
LAND RESOURCES MANAGEMENT
WETLANDS BUREAU

29 Hazen Drive, PO Box 95, Concord, NH 03302-0095
Phone: (603) 271-2147 Fax: (603) 271-6588
<http://des.nh.gov/organization/divisions/water/wetlands>



PERMIT APPLICATION

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

1. REVIEW TIME:

Indicate your Review Time below. Refer to Guidance Document A for instructions.

☒ Standard Review (Minimum, Minor or Major Impact)

☐ Expedited Review (Minimum Impact)

2. PROJECT LOCATION:

Separate applications must be filed with each municipality that jurisdictional impacts will occur in.

ADDRESS: **Rte. 103 over Sugar River**

TOWN/CITY: **Sunapee**

TAX MAP:

BLOCK:

LOT:

UNIT:

USGS TOPO MAP WATERBODY NAME: **Sugar River**

☐ NA

STREAM WATERSHED SIZE: **53.96 mi²**

☐ NA

LOCATION COORDINATES (If known): **043°22'22.59" 072°7'29.47"**

☐ UTM ☐ State Plane

☒ Latitude/Longitude

3. PROJECT DESCRIPTION:

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

The existing structure is a three span concrete slab bridge. The bridge has a total length of 100'-5" and a width of 44'-4". Proposed work consists of the following: place sandbag cofferdams, repair steel H-Pile piers and encase them with concrete, place riprap, install temporary scaffolding and repair the deck.

4. RELATED PERMITS, ENFORCEMENT, EMERGENCY AUTHORIZATION, SHORELAND, ALTERATION OF TERRAIN, ETC...

5. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: **NHB 16 - 1754**

b. ☐ Designated River the project is in ¼ miles of: _____; and

date a copy of the application was sent to Local River Advisory Committee: Month: ____ Day: ____ Year: ____

☒ NA

6. APPLICANT INFORMATION (Desired permit holder)LAST NAME, FIRST NAME, M.I.: **Johnson, Steve W**TRUST / COMPANY NAME: **NH Dept. of Transportation**MAILING ADDRESS: **7 Hazen Drive**TOWN/CITY: **Concord**STATE: **NH**ZIP CODE: **03302**EMAIL or FAX: **sjohnson@dot.state.nh.us**PHONE: **603 271 3667**ELECTRONIC COMMUNICATION: By initialing here: *SW*, I hereby authorize DES to communicate all matters relative to this application electronically**7. PROPERTY OWNER INFORMATION (If different than applicant)**

LAST NAME, FIRST NAME, M.I.:

TRUST / COMPANY NAME:

MAILING ADDRESS:

TOWN/CITY:

STATE:

ZIP CODE:

EMAIL or FAX:

PHONE:

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize DES to communicate all matters relative to this application electronically

8. AUTHORIZED AGENT INFORMATIONLAST NAME, FIRST NAME, M.I.: **Weatherbee, Anthony N**COMPANY NAME: **NH Dept. of Transportation**MAILING ADDRESS: **7 Hazen Drive**TOWN/CITY: **Concord**STATE: **NH**ZIP CODE: **03302**EMAIL or FAX: **aweatherbee@dot.state.nh.us**PHONE: **603-271-3667**ELECTRONIC COMMUNICATION: By initialing here: *ANW*, I hereby authorize DES to communicate all matters relative to this application electronically**9. PROPERTY OWNER SIGNATURE:**

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a copy of the application materials to the NH State Historic Preservation Officer.
8. I authorize DES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of DES correspondence. DES will not forward returned mail.



Property Owner Signature

Print name legibly


Date

MUNICIPAL SIGNATURES

10. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.


		
Authorized Commission Signature	Print name legibly	Date

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. The Conservation Commission signature should be obtained prior to the submittal of the original application and four copies to the town/city clerk for mailing to the DES.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will reviewed in the standard review time frame.

11. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 1991), I hereby certify that the applicant has filed five application forms, five detailed plans, and five USGS location maps with the town/city indicated below and I have received and retained certified postal receipts (or copies) for all abutters identified by the applicant.

			
Town/City Clerk Signature	Print name legibly	Town/City	Date

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3, I(d):

1. For applications where "Expedited Review" is checked on page 1, accept the application for mailing only if the Conservation Commission signature has been sought;
2. Collect the postal receipts demonstrating that all abutters and the Local Advisory Committee were sent proper notice;
3. Collect any administrative fees, not to exceed \$10 plus the cost of postage by certified mail (RSA 482-A:3, I).
4. IMMEDIATELY sign the original application and four copies in the signature space provided above;
5. Retain one copy of the application form, one complete set of attachments and the postal receipts demonstrating that all abutters and the Local River Advisory Committee were notified and make them reasonably accessible to the public;
6. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board in accordance with RSA 482-A:3, I; and
7. IMMEDIATELY send the ORIGINAL application form, one complete set of attachments and filing fee, by CERTIFIED MAIL to the NHDES Wetlands Bureau at the address indicated on page 1 of this application. (DO NOT HOLD FOR CONSERVATION COMMISSION SIGNATURE).

12. IMPACT AREA:

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact

Permanent: impacts that will remain after the project is complete.

Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

After-the-fact (ATF): work completed prior to receipt of this application by DES. Check box to indicate ATF.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.	TEMPORARY Sq. Ft. / Lin. Ft.
Forested wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Scrub-shrub wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Emergent wetland	<input type="checkbox"/> ATF	1044 <input type="checkbox"/> ATF
Wet meadow	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Intermittent stream	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Perennial Stream / River	1562 / 70 <input type="checkbox"/> ATF	2241 / 101 <input type="checkbox"/> ATF
Lake / Pond	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Bank - Intermittent stream	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Bank - Perennial stream / River	140 / 70 <input type="checkbox"/> ATF	2534 / 176 <input type="checkbox"/> ATF
Bank - Lake / Pond	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Tidal water	/ <input type="checkbox"/> ATF	/ <input type="checkbox"/> ATF
Salt marsh	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Sand dune	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Prime wetland	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Prime wetland buffer	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Undeveloped Tidal Buffer Zone (TBZ)	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Previously-developed upland in TBZ	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - Lake / Pond	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - River	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
Docking - Tidal Water	<input type="checkbox"/> ATF	<input type="checkbox"/> ATF
TOTAL	1702 / 140	5819 / 277

13. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☐ Minimum Impact Fee: Flat fee of \$ 200

☒ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking) 7521 sq. ft. X \$0.20 = \$ 1504.20

Temporary (seasonal) docking structure: sq. ft. X \$1.00 = \$

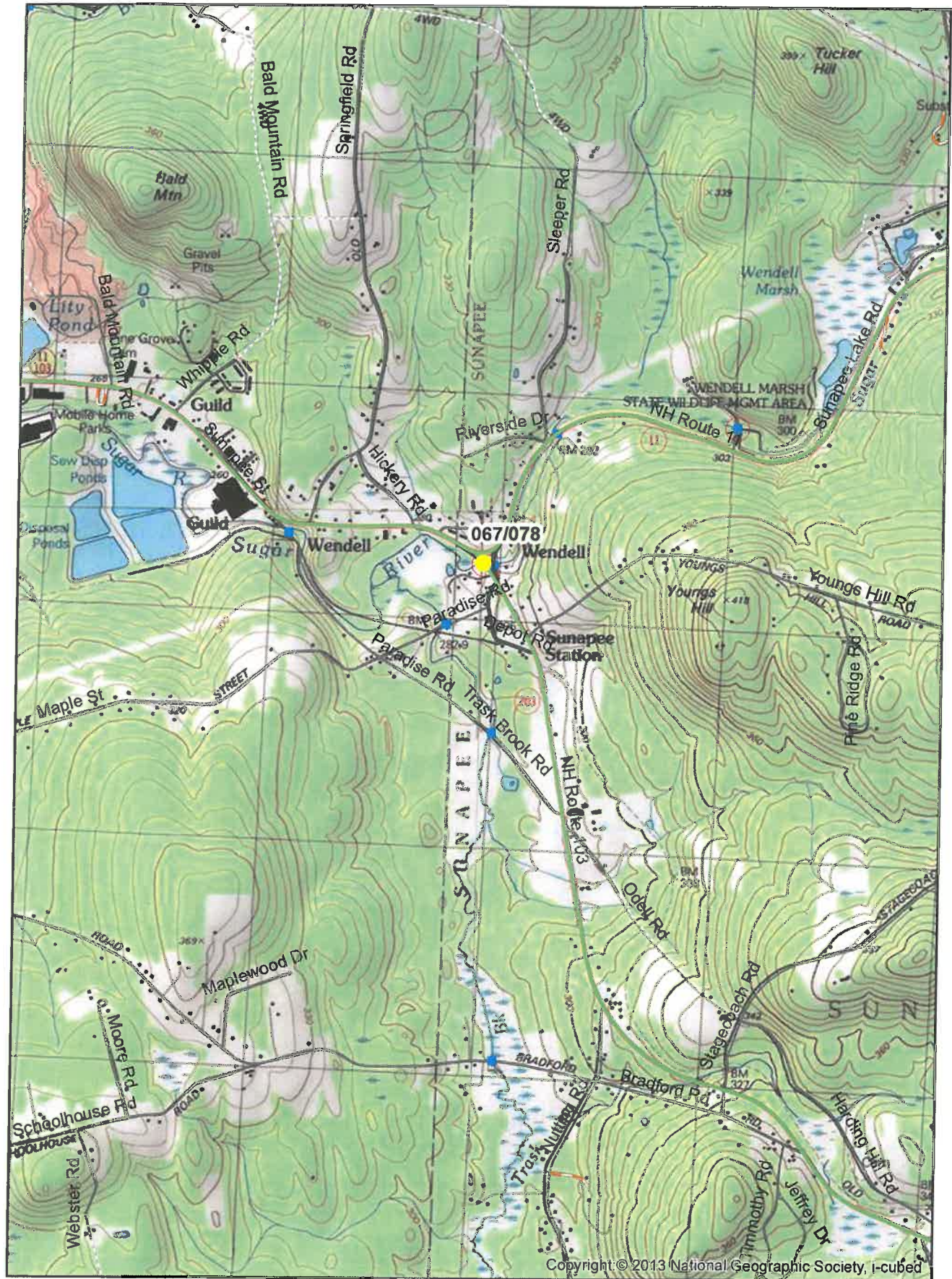
Permanent docking structure: sq. ft. X \$2.00 = \$

Projects proposing shoreline structures (including docks) add \$200 = \$

Total = \$

The Application Fee is the above calculated Total or \$200, whichever is greater = \$ 1504.20

Location Map - Sunapee Bridge #067/078



0 0.2 0.4 0.8 Miles

1:24,000



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<http://des.nh.gov/organization/divisions/water/wetlands/index.htm>

Permit Application Status: <http://des.nh.gov/onestop/index.htm>



PERMIT APPLICATION – ATTACHMENT A **MINOR & MAJOR 20 QUESTIONS**

Env-Wt 302 04 Requirements for Application Evaluation – For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:

1. The need for the proposed impact.

There is heavy section loss to the steel H-Pile columns of the piers at and below the waterline. Columns 10 and 11 of pier 1 are holed. The deck is cracked and spalled at the curbs and centerline. It is necessary to impact jurisdictional areas to provide for the repairs. The impacts are for the concrete encasing, the riprap and for temporary construction access. If the structure is not rehabilitated, it will eventually be load posted or closed.

2. That the alternative proposed by the applicant is the one with the least impact to the wetlands or surface waters on site.

The alternatives considered are as follows:

Replace the structure with a new structure in compliance with the NH Stream Crossing Guidelines: According to the NH Stream Crossing Guidelines, if a new structure were to be constructed at this location it would require a span of 107'-3". A structure of this size would cost approximately \$2,000,000. Spending this much money on a structure that could be adequately preserved for approximately \$80,000 would not be a practicable use of resources. There would also be significant wetland impacts if a structure of this size were installed due to the additional footprint and for construction.

Repair existing piers and place riprap: This is the proposed alternative. The structure can be preserved by repairing the piers and deck. The proposed riprap around the pier is less than what would be required for a new structure. The temporary impacts for construction access are less than what would be required for a new and larger structure. This is the most cost-effective solution and also proposes the least amount of wetland impacts.

In the June 15, 2016 Natural Resource Agency Coordination Meeting no concerns with this project were raised.

3. The type and classification of the wetlands involved.

R2UB1: Riverine, lower perennial, unconsolidated bottom, cobble gravel

PFO1E: Palustrine, forested, broad-leaved deciduous, seasonally flooded/saturated

PEM1E: Palustrine, emergent, persistent, seasonally flooded/saturated

Bank

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

Sugar River flows into the Connecticut River.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

Sugar River has not been identified as a rare surface water of the state.

6. The surface area of the wetlands that will be impacted.

**3803ft² Riverine (2241ft² temporary, 1562ft² permanent)
0ft² Palustrine, forested (0ft² temporary, 0ft² permanent)
1044ft² Palustrine, emergent / bank (1044ft² temporary, 0ft² permanent)
2674ft² Bank (2534ft² temporary, 140ft² permanent)**

7. The impact on plants, fish, and wildlife, but not limited to:

- a. Rare, special concern species;
- b. State and federally listed threatened and endangered species;
- c. Species at the extremities of their ranges;
- d. Migratory fish and wildlife;
- e. Exemplary natural communities identified by the DRED-NHB; and
- f. Vernal pools.

No rare or special concern species were identified within the proposed project area.

There were no State or Federally listed threatened or endangered species identified within the project limits.

There are no species known to be at the extremities of their ranges located in the project area.

As for the Northern Long-eared Bat (NLEB), tree clearing is being coordinated with Rebecca Martin of the Bureau of Environment and Andrew Hall of the Bureau of Bridge Maintenance. If any signs of bat utilization are observed, work will not commence until coordination with USFWS and NHDOT Bureau of Environment has been completed.

Migratory fish and wildlife will be not be negatively impacted.

The Department has coordinated with DRED and the results of the NHB review revealed no records in this area.

There were no vernal pools identified and/or delineated in the project area.

8. The impact of the proposed project on public commerce, navigation and recreation.

During construction, access to the nearby residents and/or commercial businesses will be maintained at all times. Access will be maintained by alternating traffic with a one lane closure. Sugar River is non-navigable water which makes it non-conductive to boaters. There are no recreational areas that have been identified in this area except for the possibility for fishing. During construction fishing activities from the banks of the brook will need to occur outside of the construction work zone. When construction is completed, the project as proposed will be a benefit to the public commerce.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The project will not significantly interfere with the aesthetic interests of the general public. The proposed improvements will be more pleasing to the eye than the structure in poor condition.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

The project will not interfere with or obstruct public rights of passage or access. During construction at least one lane of alternating traffic will be maintained at all times. This will ensure access to all nearby businesses and residential homes in this area. Upon completion of this project the bridge will be reopened to two way traffic.

11. The impact upon the abutting pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to riprap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

The project is expected to have a positive impact on abutting properties. The rehabilitated structure will better serve the abutting properties if they need to travel on the road. The riprap that is being installed will prevent a washout of the structure which will better protect abutting properties.

The project as proposed will not alter the chance of flooding on abutting properties.

12. The benefit of a project to the health, safety, and well-being of the general public.

The project will provide a safer, longer lasting structure and roadway. If the structure is not rehabilitated, the bridge will eventually be load posted or closed. Keeping the roadway open benefits commerce, trade, emergency access, etc, for the general public.

13. The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and difference in the quality of water entering and exiting the site.

The surface water currently runs off the bridge at the curb lines and then runs off the structure. Upon completion of the project the structure will drain water in the same manner. The project will have no adverse effects on the quality or quantity of surface and ground water. Best Management Practices will be used to prevent any adverse effect to water quality during construction.

14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

Flooding: Incasing the piers with concrete will not cause or increase flooding. The proposed structure has been checked at a variety of flows and the structure will pass the 100 year storm event. Although encasing the H-Piles with concrete will reduce the hydraulic area, the reduction in area will be offset by having a single obstruction in the river rather than having 11 individual obstructions per pier. Therefore high flows will not be restricted, and low flows will be maintained as a result of this project.

Erosion: The riprap placed around the piers will prevent erosion and preserve the natural alignment and gradient of the stream channel.

Sedimentation: Nothing that will be a barrier to sediment transport will be installed in this project.

15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

Surface waters will not be reflected or redirected as a result of this project. Sugar River does not have enough surface water for wave energy to be an issue.

16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alternations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage ownership of that wetland and the percentage of that ownership that would be impacted.

The work consists of the repair of an existing bridge structure. There are no similar structures in the vicinity owned by other parties that would require repair.

17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.

The value of the wetland as a habitat for living organisms will be unchanged as a result of this project. A function of Sugar River is to carry water from a higher elevation to a lower elevation. This project will not interfere with that function.

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

This project is not located in or near any Natural Landmarks listed on the National Register.

19. The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

There are no areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, or national lakeshores that will be impacted as a result of this project.

20. The degree to which a project redirects water from one watershed to another.

The project as proposed will not redirect water from one watershed to another.

Additional comments

Sunapee 067/078, non-federal, 41014

The bridge is located on Rte. 103 over Sugar River. It is a three span concrete slab bridge that is 45' wide and is supported on steel H-Piles.

The piles are rusted and they need to be plated and encased with concrete. Riprap will be placed around the concrete encasing and it will be placed level with the streambed.

The concrete deck will be repaired.

There will be temporary impacts to provide for the repairs. The site will be accessed from the wetlands on the NE side.

Mike Hicks asked for info on NLEB coordination.

Gino Infascelli said that no mitigation is required.

This project has not been previously discussed at a Monthly Natural Resource Agency Coordination Meeting.

MITIGATION REPORT

This project is maintenance of an existing structure and therefore mitigation is not required. At the June 15, 2016 Natural Resources Agency Meeting it was determined that no mitigation would be required.

Hydraulic Data

Drainage Area – 53.96 sq mi

Q 100 = 2040+/- cfs

The proposed structure will pass the 100 year flood.

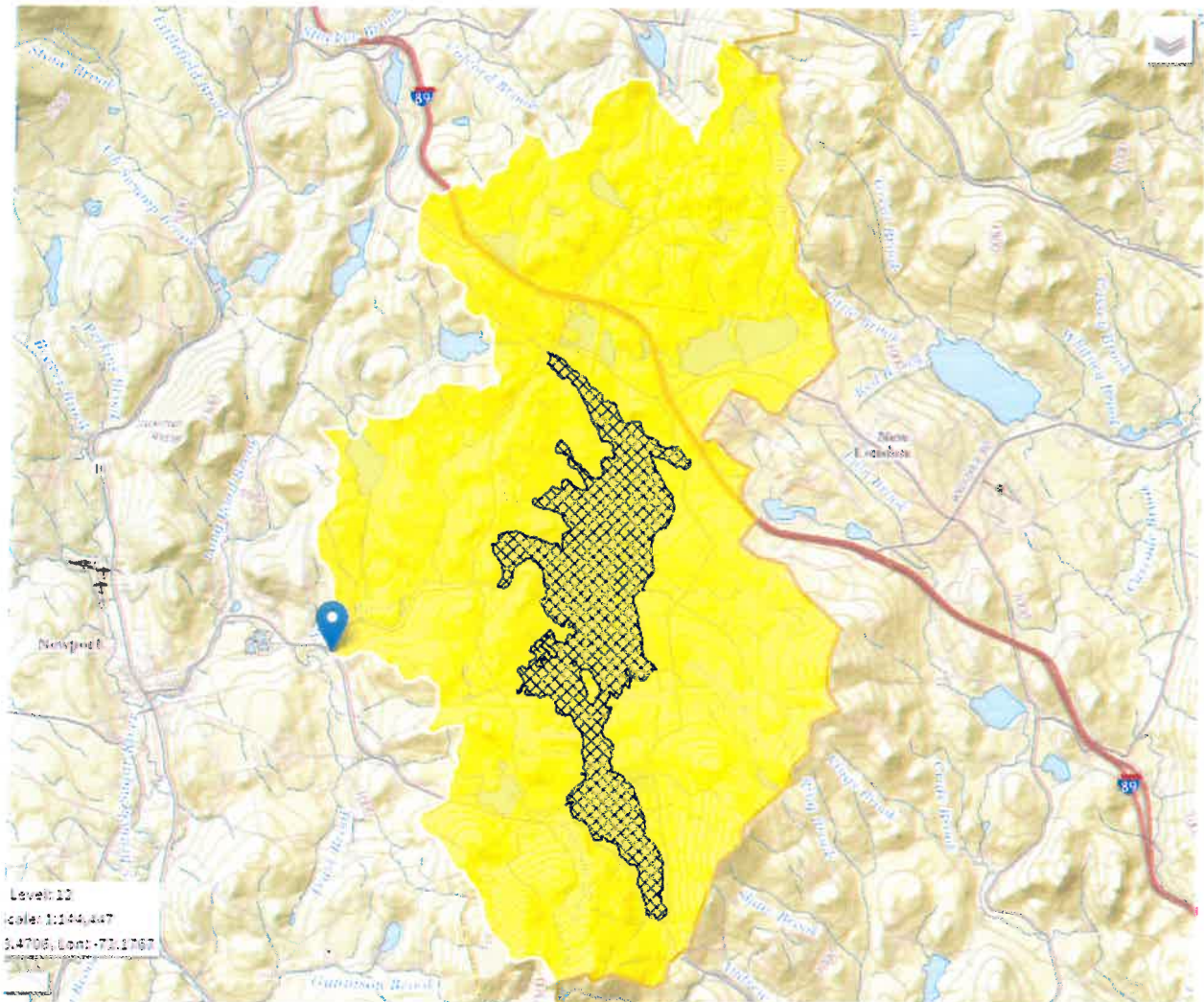


Figure 8: Watershed



THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGE MAINTENANCE
7 Hazen Drive, PO Box 483, Concord, NH 03302-0095
Phone: (603) 271-3667 Fax: (603) 271-1588



WETLANDS PERMIT APPLICATION – ATTACHMENT C **Stream Crossing Requirements & Information**

Env-Wt 904.09(a) – If the applicant believes that installing the structure specified in the applicable rule is not practicable then the applicant may propose an alternative design in accordance with this section.

1. Please explain why the structure specified in the applicable rule is not practicable (Env-Wt 101.69 defines practicable as "available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes") (question 2, Attachment A, Minor and Major 20 Questions);

Sugar River has a drainage area of 53.96 square miles which qualifies this stream as a Tier 3 Crossing. The required span based on the NH Stream Crossing Guidelines for a new crossing is 107'-3". A structure of this size would cost approximately \$2,000,000. Spending this much money on a structure that could be adequately preserved for approximately \$80,000 would not be a practicable use of resources. There would be a significant increase in cost and wetland impacts if a structure of this size were installed due to the additional footprint and for construction.

2. Please explain how the proposed alternative meets the specific design criteria for Tier 2 and Tier 3 crossings to the maximum extent practicable. Env-Wt 904.05 Design Criteria for Tier 2 and Tier 3 Stream Crossings – New Tier 2 stream crossings, replacement Tier 2 crossings that do not meet the requirements of Env-Wt 904.07, and new and replacement Tier 3 crossings shall be designed and constructed...

...In accordance with the NH Stream Crossing Guidelines:

The NH Stream Crossing Guidelines do not mention maintenance to a structure in a Tier 3 watershed.

The proposed structure will match the existing slope and alignment.

The bottom of the existing and proposed structure is a natural bottom.

Wildlife passage will not be affected by this project.

The proposed structure will maintain the flow depths found in the existing structure.

The proposed structure is expected to be able to pass the 100 year flood event.

...With bed forms and streambed characteristics necessary to cause water depths and velocities within the crossing structure at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the stream crossing.

Water depths and velocities within the crossing at a variety of flows will be comparable to the existing depths and velocities. The flows are comparable to those found in the natural channel upstream and downstream of the stream crossing.

...To provide a vegetated bank on both sides of the watercourse to allow for wildlife passage:

It is not possible to provide vegetated banks on both sides of the watercourse below the roadway, regardless of the type of structure.

...To preserve the natural alignment and gradient of the stream channel, so as to accommodate natural flow regimes and the function of the natural floodplain (questions 14 and 15, Attachment A, Minor and Major 20 Questions);

The natural alignment and gradient of the stream channel will be preserved so as to accommodate natural flow regimes and the function of the natural floodplain.

... To accommodate the 100-year frequency flood and to ensure that there is no increase in flood stages on abutting properties (*questions 11 and 14, Attachment A, Minor and Major 20 Questions*):

**The project as proposed will not alter the chance of flooding on abutting properties.
The proposed bridge is expected to pass the 100 year flood event.**

... To simulate a natural stream channel:

The natural channel bottom will not be changed as a result of this project.

... So as not to alter sediment transport competence (*question 14, Attachment A, Minor and Major 20 Questions*):

Nothing that will be a barrier to sediment transport will be installed in this project.

Env-Wt 904.09(c)(3) – The alternative design must meet the general design criteria specified in Env-Wt 904.01:

(a) Not be a barrier to sediment transport (*question 14, Attachment A, Minor and Major 20 Questions*);

Nothing that will be a barrier to sediment transport will be installed in this project.

(b) Prevent the restriction of high flows and maintain existing low flows (*question 14, Attachment A, Minor and Major 20 Questions*);

Encasing the pier columns with concrete and installing riprap will have a negligible effect on the hydraulic capacity of the structure. The proposed structure has been checked at a variety of flows and the structure will still pass the 100 year storm event. High flows will not be restricted, and low flows will be maintained as a result of this project. The existing crossing has no history of flooding or overtopping of the banks of the stream.

(c) Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the water body beyond the actual duration of construction (*question 7, Attachment A, Minor and Major 20 Questions*);

The movement of aquatic life indigenous to the water body beyond the actual duration of construction will not be obstructed or otherwise substantially disrupted beyond the duration of construction.

(d) Not cause an increase in the frequency of flooding or overtopping of banks (*question 14, Attachment A, Minor and Major 20 Questions*);

Encasing the pier columns with concrete and installing riprap will have a negligible effect on the hydraulic capacity of the structure. The proposed structure has been checked at a variety of flows and the structure will still pass the 100 year storm event. High flows will not be restricted, and low flows will be maintained as a result of this project. The existing crossing has no history of flooding or overtopping of the banks of the stream.

(e) Preserve watercourse connectivity where it currently exists (*question 15, Attachment A, Minor and Major 20 Questions*);

Connectivity will not be changed as a result of this project.

(f) Restore watercourse connectivity where...

... connectivity previously was disrupted as a result of human activity(ies) (*question 15, Attachment A, Minor and Major 20 Questions*);

Connectivity will not be changed as a result of this project.

... restoration of connectivity will benefit aquatic life upstream or downstream of the crossing (*question 15, Attachment A, Minor and Major 20 Questions*);

Connectivity will not be changed as a result of this project.

(g) Not cause erosion, aggradation, or scouring upstream or downstream of the crossing (*question 14, Attachment A, Minor and Major 20 Questions*);

Erosion: The riprap placed around the piers will prevent erosion and preserve the natural alignment and gradient of the stream channel.

Sedimentation: Nothing that will be a barrier to sediment transport will be installed in this project.

(h) Not cause water quality degradation (*question 13, Attachment A, Minor and Major 20 Questions*).

The project as proposed will not impact the quantity or quality of surface and/or groundwater at this site. Best Management Practices will be used to prevent any adverse effect to water quality during construction.



New Hampshire Natural Heritage Bureau

To: Tony Weatherbee
7 Hazen Drive
Concord, NH 03302

Date: 6/2/2016

From: NH Natural Heritage Bureau

Re: Review by NH Natural Heritage Bureau of request dated 6/2/2016
NHB File ID: NHB16-1754

Applicant: Tony Weatherbee

Location: Tax Map(s)/Lot(s):
Sunapee

Project Description: Rehabilitate the bridge that carries Rte. 103 over Sugar River (067/078). The existing structure is a three span IB-C bridge. The bridge has a total length of 100'-5" and a width of 44'-3.5". Proposed work consists of the following: place sandbag cofferdams, encase steel H-Pile piers with concrete and place riprap.

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

This report is valid through 6/1/2017.



MAP OF PROJECT BOUNDARIES FOR NHB FILE ID: NHB16-1754





United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
PHONE: (603)223-2541 FAX: (603)223-0104
URL: www.fws.gov/newengland

Consultation Code: 05E1NE00-2016-SLI-1855

July 15, 2016

Event Code: 05E1NE00-2016-E-02618

Project Name: Sunapee 067/078

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: Sunapee 067/078

Official Species List

Provided by:

New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 03301
(603) 223-2541
<http://www.fws.gov/newengland>

Consultation Code: 05E1NE00-2016-SLI-1855

Event Code: 05E1NE00-2016-E-02618

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: Sunapee 067/078

Project Description: The existing structure is a three span concrete slab bridge. The bridge has a total length of 100'-5" and a width of 44'-4". Proposed work consists of the following: place sandbag cofferdams, repair steel H-Pile piers and encase them with concrete, place riprap, install temporary scaffolding and repair the deck.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: Sunapee 067/078

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-72.12469428777695 43.37313752978162, -72.12446630001068 43.37306149186504, -72.12441802024841 43.37293476179221, -72.12440729141235 43.37273004342282, -72.1244689822197 43.37265790440418, -72.12465405464172 43.37258186588625, -72.1249732375145 43.37258966471296, -72.12518244981766 43.372683250555625, -72.12535142898558 43.372835327241944, -72.1253702044487 43.372977655077264, -72.12532997131348 43.373092686919264, -72.12506711483002 43.373139479470524, -72.12469428777695 43.37313752978162)))

Project Counties: Sullivan, NH



United States Department of Interior
Fish and Wildlife Service

Project name: Sunapee 067/078

Endangered Species Act Species List

There are a total of 1 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Mammals	Status	Has Critical Habitat	Condition(s)
Northern long-eared Bat (<i>Myotis septentrionalis</i>)	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: Sunapee 067/078

Critical habitats that lie within your project area

There are no critical habitats within your project area.

Wetland Application – NHDOT Cultural Resources Review

For the purpose of compliance with regulations of the National Historic Preservation Act, the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the US Army Corps of Engineers' *Appendix C*, and/or state regulation RSA 227-C:9, *Directive for Cooperation in the Protection of Historic Resources*, the NHDOT Cultural Resources Program has reviewed the enclosed Standard Dredge and Fill Application for potential impacts to historic properties.

Above Ground Review

Known/approximate age of structure: 1957/1979 3 span Concrete slab bridge

☒ No Potential to Cause Effect/No Concerns

Proposed work includes placing sandbag cofferdams, installing temp scaffolding, encasing steel H-pile piers with concrete, repairing concrete deck, placing riprap around piers.

☐ Concerns:

Below Ground Review

Recorded Archaeological site: ☐ Yes ☒ No

Nearest Recorded Archaeological Site Name & Number: **27-SU-0040 O. Comstock Sawmill**

☐ Pre-Contact ☒ Post-Contact

Distance from Project Area:

2759 ft (840 meters) west of project area

☒ No Potential to Cause Effect/No Concerns

Temporary impacts are associated with construction access from northeast side (less than required for a new bridge). Google map images appear to depict modified landscapes. Proposed project has limited impacts as existing structure is to be repaired; riprap will preserve and match the existing alignment, slope and gradient of stream channel

☐ Concerns:

Reviewed by:



9/22/2016

NHDOT Cultural Resources Staff

Date:



**US Army Corps
of Engineers**
New England District

**New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)**

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5, regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*		X
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org , specifically the book <u>Natural Community Systems of New Hampshire</u> .		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)	X	
2.5 The overall project site is more than 40 acres.		X
2.6 What is the size of the existing impervious surface area?	N/A	
2.7 What is the size of the proposed impervious surface area?	N/A	
2.8 What is the % of the impervious area (new and existing) to the overall project site?	N/A	
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.)		X
3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm . • Data Mapper: www.granit.unh.edu . • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html .		X

3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	X	
4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	X	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		X
5. Historic/Archaeological Resources		
For a minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) shall be sent to the NH Division of Historical Resources as required on Page 5 of the PGP**		N/A

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law..



Figure 1: Rte. 103 over the structure (12/2015).



Figure 2: Structure elevation view (10/2015).



Figure 3: Deck to be repaired (12/2015).



Figure 4: Typical condition of steel H-Pile pier 1 to be encased with concrete (12/2015).



Figure 5: Typical condition of steel H-Pile pier 2 to be encased with concrete (9/2015).



Figure 6: Underside of structure (9/2015).



Figure 7: Deteriorated concrete at centerline (12/2015).

CONSTRUCTION SEQUENCE

1. Sandbags will be placed around the pier and the work zone will be dewatered. Stream flow will be maintained through the natural channel.
2. The H-Piles on the first pier will be repaired and encased with concrete.
3. Riprap will be placed around concrete encasing.
4. Steps 1 through 3 will be repeated for the second pier.
5. Temporary scaffolding will be installed and the deck will be repaired.
6. All dewatering devices will be removed and the site will be restored to its original quality.

Note:

Project will use and maintain DES Best Management Practices at all stages of construction.

PART Env-Wt 404 CRITERIA FOR SHORELINE STABILIZATION

The rehabilitation of the bridge that carries Rte. 103 over Sugar River proposes the placement of stone fill within areas under the jurisdiction of the NH Wetlands Bureau and the US Army Corps of Engineers. The stone fill will be located in the channel and along the bank of the proposed structure as shown on the plans.

Pursuant to PART Wt 404 Criteria for Shoreline Stabilization, the following addresses each codified section of the Administrative Rules:

Wt 404.01 Least Intrusive Method

The riverbank stabilization treatment proposed is the least intrusive construction method necessary to minimize the disruption to the existing shorelines. The stone treatment can be reasonably constructed utilizing general highway construction methods.

Wt 404.02 Diversion of Water

Proposed roadway drainage will allow storm water run-off to be diverted so that it will flow over vegetated areas, insofar as possible, prior to entering Sugar River. This will minimize erosion of the shoreline.

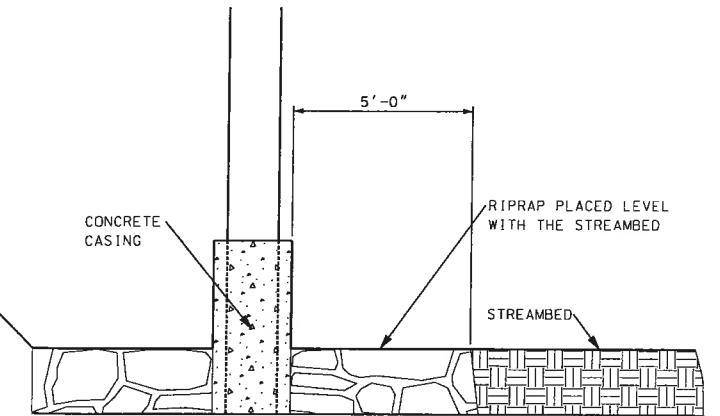
Wt 404.03 Vegetative Stabilization

Natural vegetation will be left undisturbed to the maximum extent possible. The only locations being disturbed are the impacted areas on the plan for construction. All newly developed slopes and disturbed areas will have humus and seed applied for turf establishment, which will help stabilize the project area.

Wt 404.04 Rip-Rap

- (a) Stone fill, as proposed, is shown on the attached plans to protect the channel and bank as necessary. Stable embankments are necessary to maintain the structural integrity of the bridge during all flow conditions.
- (b) (1-5) The minimum and maximum stone size, the gradation, cross sections of the stone fill, proposed location, and other details have been provided on the attached plans. Bedding for the stone fill will consist of natural ground excavated to the proposed underside of the stone fill.
- (b) (6) Enclosed are plan sheets to sufficiently indicate the relationship of the project to fixed points of reference, abutting properties, and features of the natural shoreline.
- (b) (7) Stone fill is recommended for the limits shown on the attached plans to protect the banks from erosion during flood flows, from scour during all flows, and slopes greater than 2:1 have difficulty supporting vegetation.
- (c) This project is not located adjacent to a great pond or water body where the state holds fee simple ownership.
- (d) Stone fill is proposed to extend down to and adequately keyed into the channel bottom to prevent possible undermining of the slope.
- (e) The enclosed plan has been stamped by a professional engineer.

RIPRAP GRADATION
D15 < 12"
D50 < 20"
D100 < 36"



RIPRAP CROSS SECTION
NOT TO SCALE

NH RTE. 103
TOWARDS NEWPORT

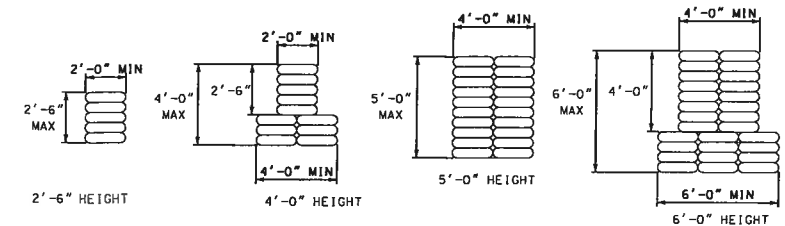
0.2mi W NEWPORT TL

SUGAR
RIVER
FLOW

SANDBAG
COFFERDAMS

NH RTE. 103
TOWARDS NEWBURY

WETLAND IMPACTS
SCALE: 1" = 20'-0"



COFFERDAM DETAILS
NOT TO SCALE

WETLANDS DELINEATED BY M. URBAN ON 10/2015






10 0 10 20
SCALE IN FEET

STATE OF NEW HAMPSHIRE									
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE									
TOWN	SUNAPEE	BRIDGE NO.	067/078	STATE PROJECT	41014				
LOCATION NH RTE. 103 OVER SUGAR RIVER									
WETLAND IMPACTS						BRIDGE SHEET			
REVISIONS AFTER PROPOSAL		BY	DATE	BY	DATE	1 OF 2			
DESIGNED		ANW	6/15/16	CHECKED		FILE NUMBER			
DRAWN		ANW	6/15/16	CHECKED		SUNAPEE			
QUANTITIES				CHECKED		067/078			
ISSUE DATE		FISCAL YEAR	2016	CREW	04	SHEET NO.	1	TOTAL SHEETS	2
REV. DATE									
SHEET SCALE		AS NOTED							

WETLAND IMPACT SUMMARY

WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION		
			PERMANENT				TEMPORARY		PERMANENT		
			N.H.W.B. (NON WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)				BANK LEFT	BANK RIGHT	CHANNEL
			SF	LF	SF	LF			LF	LF	LF
1	R2UB1	A			1562	70	2241	101			
2	BANK/PEM1E	B					1044	86			
3	BANK	C					1105	72			
3	BANK	D	140	70			1429	104			
		TOTAL	140	70	1562	70	5819	363	0	0	0

LEGEND

TYPE OF WETLAND IMPACT	SHADING/HATCHING	WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)		#
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)		#
TEMPORARY IMPACTS		#

WETLAND CLASSIFICATION CODES	
R2UB1	RIVERINE, LOWER PERENNIAL, UNCONSOLIDATED BOTTOM, COBBLE GRAVEL
BANK/ PEM1E	PALUSTRINE, EMERGENT, PERSISTENT, SEASONALLY FLOODED / SATURATED / BANK
BANK	

STATE OF NEW HAMPSHIRE																					
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE MAINTENANCE																					
TOWN		SUNAPEE				BRIDGE NO.				067/078		STATE PROJECT		41014							
LOCATION NH RTE. 103 OVER SUGAR RIVER																					
WETLAND IMPACTS												BRIDGE SHEET									
REVISIONS AFTER PROPOSAL												BY		DATE		BY		DATE			
												DESIGNED		ANW		6/15/16		CHECKED			
												DRAWN		ANW		6/15/16		CHECKED			
												QUANTITIES				CHECKED					
SHEET SCALE				ISSUE DATE				FISCAL YEAR		CREW		SHEET NO.		TOTAL SHEETS							
AS NOTED				REV. DATE				2016		04		2		2							